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BOTTOM
OR
FLOAT-FISHING

H. CHOLMONDELEY PENNELL

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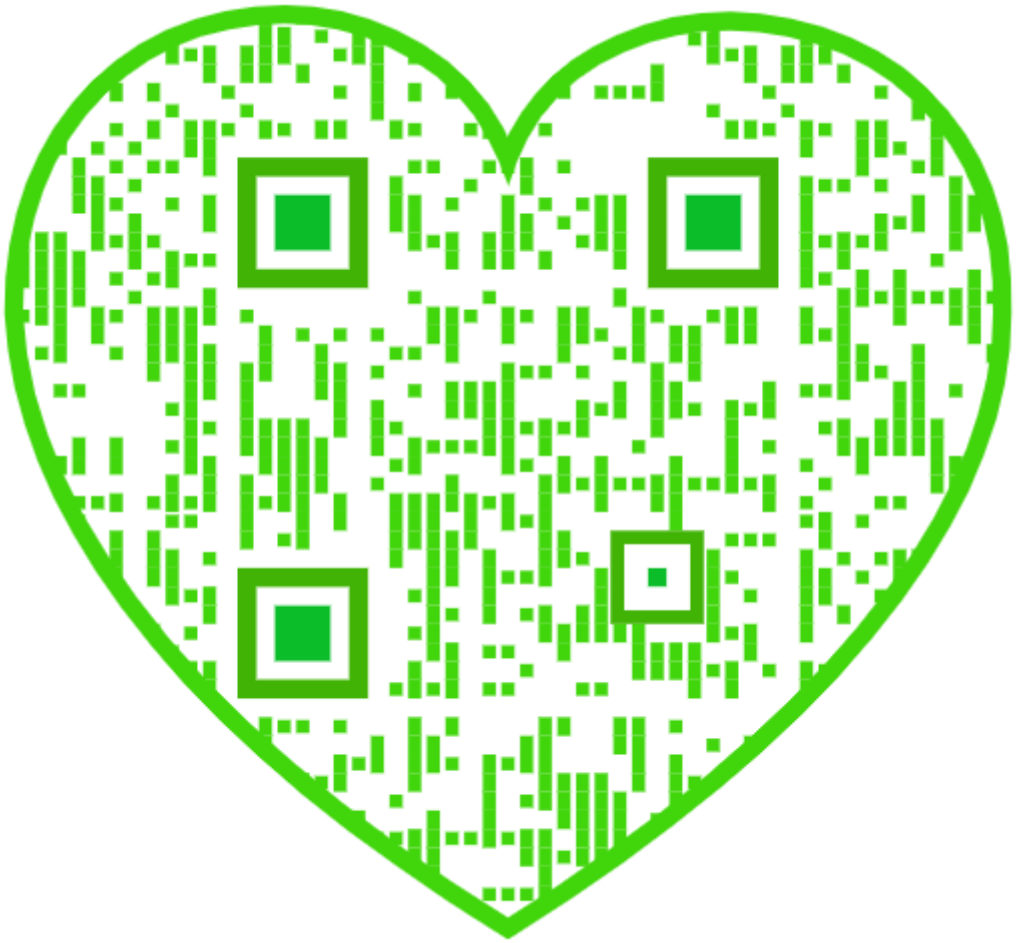

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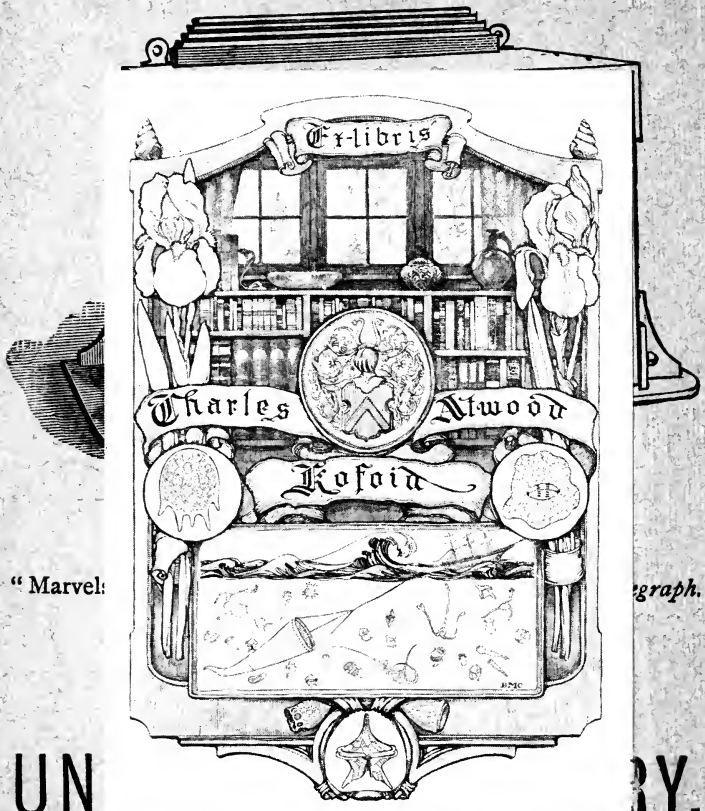

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BOTTOM

OR

FLOAT-FISHING

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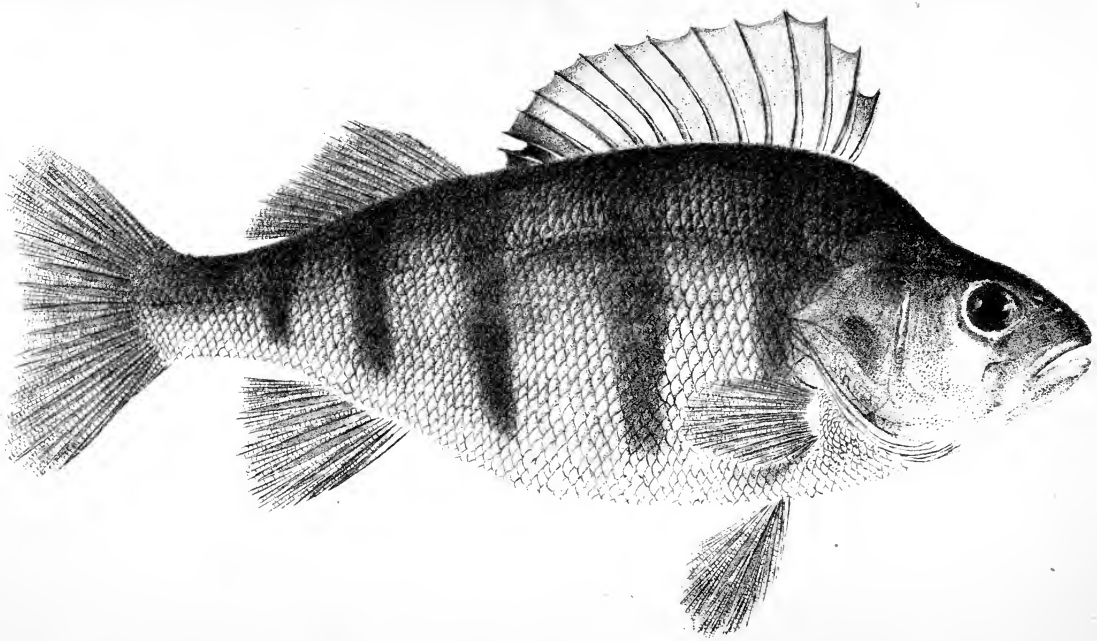

THE PERCH (*perca fluviatilis*)

BOTTOM

OR

FLOAT-FISHING

BY

H. CHOLMONDELEY-PENNELL

LATE H.M. INSPECTOR OF FISHERIES

LONDON

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BOTTOM

OR

FLOAT-FISHING.

INTRODUCTORY REMARKS.

"FINE-FISHING."

OWING doubtless to the rapidly increasing popularity of fishing of late years, there are but few waters on which the shadow of the rod or glitter of the bait is not more or less familiar, and as a consequence fish are everywhere becoming more wary and more difficult to catch. If, therefore, we would make as large baskets as we used to do, we must "subtilise" more and more our deceptive arts, so as to keep pace with the growth of fish-intelligence; and to this end the most obvious, and on the whole the most important means, is to be sought in improving and refining to the uttermost every part of our fishing tackle. Other circumstances

being equal, it may be safely asserted that the man who "fishes finest" will also catch most; and if we would ensure the presence of the greatest number of "fish diners" we must offer them a *recherché menu*. "Tell me what your tackle is, and I will tell you what your basket is."

Nor is it only as regards the basket that fine-fishing is to be commended: it is the only mode of killing fish that deserves the name of sport. To land a twenty pound Salmon or Pike by a single strand of gut, almost invisible as it cuts the water like a knife, is a performance to be proud of; to lure "from his dark haunt beneath the tangled roots," the pampered monarch of the brook—to raise, strike, and steer him by a thread like gossamer through fifty perils of bank, bush, and scaur, and finally to lay the massive beauty gurgling on the greensward with the microscopic hook still unshaken from his jaws, is a feat which taxes the powers both of mind and body to accomplish. But what skill or pleasure either can there be in hauling out a miserable animal by sheer brute force, with a machine like a cart-rope and a clothes-prop? There is no "law"

shown to the fish, and not the slightest prowess by the fisherman. It is fish-slaughter—murder—anything you like—but it is not "sport." The essence of sport consists in the amount of skill, difficulty, or danger to be exerted or overcome in its pursuit.

Bottom or Float-Fishing.

"Bottom Fishing," whatever the term may have originally conveyed, does not now always mean fishing on the bottom. Several branches of angling, such as paternostering, which comply with this condition, are excluded; and others, as for example float-fishing in mid-water, which do not comply with it, are embraced. The expression bottom-fishing in the angler's dictionary has come to imply simply rod-fishing with a float; and if we were to exclude Pike, Trout, and Grayling from the category, float-fishing and bottom-fishing might be said to be synonymous.

Bottom-fishing is divided into two classes: the old style, or ordinary bottom-fishing, and the new style, or "Nottingham fishing." These two methods of float-fishing differ mainly in their details of manipulation. And as by one or other

of them are principally taken all coarse river and pond fish, except Pike, a preliminary description of each system will save repetition in the succeeding pages.

Ordinary Bottom Fishing

Is practised with a rod, line, and float; split shot being attached to the line at a distance of from one to two feet above the hook to sink the bait, and partially sink—*Anglicè*, "cock"—the float. Sometimes a reel and running-line are used, and sometimes not; but the former plan has this advantage, that whilst a reel and running-line are hardly ever really in the way, their absence is often attended with serious practical inconvenience and loss of fish.

OBSERVATIONS ON TACKLE.

Rods.

All sorts of rods are used according to the fancy of the angler, but a few general suggestions on the point will be given when they appear necessary.

Reel Lines for Bottom-fishing.

A line of exceptional lightness, and with a disinclination to "kink" when wetted, is essential for the most successful and scientific method of bottom-fishing, known as the "Nottingham style." Long casts have to be made with so light a bait and tackle, that unless the line is almost as fine as gossamer, and runs very easily, it will not pass through the rod-rings without great trouble. It must also be "un-dressed," or it will sink instead of floating, and thus render it impossible to strike a fish effectively at long range. I have in my possession a line made at Nottingham which fulfils admirably all these conditions. It is composed of six or eight of the finest possible strands of silk, plaited somewhat in a square shape; and in thickness does not exceed that of ordinary "Holland thread," one hundred yards weighing exactly three-eighths of an ounce. And yet, fine as it is, it will lift a dead weight of between 6 lbs. and 7 lbs., which is double the strain that it is ever likely to be subjected to.

This line is also the best that can be used on

the reel for almost every description of bottom-fishing.

There is a twisted silk line, sold in the tackle-shops, which is cheaper, but which kinks directly it is wet, rendering it useless for Nottingham fishing.

GUT-LINES.

Gut-lines are preferable for every description of bottom and fly-fishing, and, especially in the latter case, it is important that they should be carefully and evenly tapered from top to bottom. The three chief points to be looked to in selecting silk-worm gut, are *roundness, evenness of substance*, and above all *transparency;* and in the case of very fine gut, to taking care that it has not been scraped, or artificially fined down in any way. Gut so treated is what is termed "*drawn-gut.*" Its appearance is not so glossy as the natural material, and it frays and wears out almost directly when exposed to moisture and friction of any sort. Exceedingly fine, round, natural gut is, of course, somewhat expensive, and not always to be obtained without trouble, but it is essential in many kinds of fishing, and will in the end be found really much

more economical than gut artificially fined. The lower, or "float-line," should therefore invariably consist of single gut, and *as fine as it can possibly be used with safety*. This point is perhaps of more importance in bottom fishing than in any other kind of angling, because in this mode the fish have more time for examination before biting. They are able, as it were, to take a leisurely survey of the position and of the arrangements prepared for their benefit. *Hair should never be used* in any kind of fishing, because gut can be procured which, when stained, is both finer and stronger than any hair, whilst it is also transparent, whereas hair is opaque.

Staining Gut.

Stained or clouded gut is much to be preferred to gut unstained, because it is less visible in the water. Different fishermen affect different stains, some preferring what is termed the "red-water stain," others a neutral or slate tint, and others a blue. The most important point in the staining of gut is to remove the gloss, which catches the light, and on a sunny day glitters through the water in a

manner that must produce no little astonishment among the fish, and which would probably equally astonish the angler himself could he obtain a bird's-eye, or rather fish's-eye, view of his line.

In this cardinal point, however, the ordinary stains used by the tackle makers generally fail; the tints of colour produced being moreover by no means the best obtainable. It is to be remembered that the fish sees the gut usually from below, and that therefore, especially in fly-fishing, the colour of the *water* hardly affects the question. A colour which without being glossy will assimilate best with the sky-tint for the time being is that which would be theoretically perfect if obtainable, but as the sky-tints change perpetually, dark alternating with light, and sun with shade, so as to make it impossible in practice to keep the colours actually matched, the next best thing is to employ a colour which harmonizes best with the largest number of the most commonly prevailing cloud-tints. This colour appears to be a sort of greyish-green, but I have never met with any single stain which will produce it. It seems to require the blending of several separate tints, and that may

probably be the secret of the success of the following receipt, for which I was indebted to my friend Mr. W. C. Stewart :—

The first step in the process is to impart to the gut a *light* tint of the common "red-water stain." For this purpose take a teacupful of black tea, and boil it with a quart of water : keeping the gut steeped in the mixture until it has acquired the necessary tint. This process will sometimes take only half an hour or even less, and sometimes several hours, according to the strength and staining power of the tea : when sufficiently stained, rinse the gut well in cold water. When dry, take a handful of logwood-chips (obtainable at most druggists), and boil them in a quart of water till the latter is reduced to about a pint. Then take it off the fire, and put into it a small piece of copperas (sulphate of copper), about the size of a hazel nut, powdered, stir the mixture, and when the copperas is dissolved, which it will be in a few minutes, dip the gut into the mixture until it has got a dirty greyish-green tinge. Very often a few instants' immersion will be sufficient, and in order to ascertain the exact amount of the stain, as well as to avoid over-staining, it is best always to keep a basin of water close at hand to rinse the gut in, the moment it is taken out of the dye.

This method of staining involves a little extra

trouble, but it is trouble well bestowed, and will tell on the basket. The removal of the gloss is I think due to the action of the copperas. Every description of gut used in fishing should be stained in this manner.

To produce the common stains already mentioned :—

Red-water stain.—Use tea-leaves as above described : or coffee, previously charred in a frying-pan and ground, will answer instead of tea.

Walnut-juice is said to produce a similar colour, but as I have never tried it, I cannot speak from experience.

Slate stain.—Soak the gut in a mixture of boiling water and ink, rinsing it well when stained.

All gut stains can be reduced in intensity by soaking the gut in boiling water.

Staining Hair.

Stained hair is seldom used, the natural brown colour being usually preferred. Before it can be properly stained the greasiness must be removed by what is termed by dyers a "mordant." A good mordant for the purpose, as well as for the

dyeing of feathers, is obtained by dissolving about a quarter of an ounce of alum in a pint of water, and slightly boiling the hair or feathers in it.

MISCELLANEA.

Knots for Lines and Gut.—Gut-knots.

Everything, however minute, that conduces to "fine-fishing" should not be without interest to the fisherman who is not merely satisfied with doing a thing passably, or even well, but who wishes to do it as well as possible; and of such minor mysteries of the gentle art there are none which are of more importance to the neatness—and therefore fineness—of tackle than the mode of knotting gut. In Salmon and other heavy fishing, moreover, this point frequently becomes a practical matter involving the loss or capture of fish—and those commonly the largest.

I make no apology, therefore, for considering this subject, in a book which it is my object to make as complete as I am able on all matters really essential to successful fishing.

And first with regard to the very common practice of lapping the ends of the gut at each side of

the knot. I am at a loss to explain the origin of this custom, which must be as troublesome to the maker as it is objectless to the user. Indeed it is worse than objectless: it is distinctly mischievous. It adds weight, so far as it goes, and clumsiness to what ought to be as light as possible; and it dots with opaque "splotches," at regular intervals, what would otherwise be a transparent, gossamer-like strand from end to end. Indeed, in bright clear weather I have frequently seen both Trout and Grayling rise at the knots on a fisherman's line when they showed no inclination whatever to meddle with his flies. It is hardly necessary to point out that for practical purposes the lapping of the short end of the gut outside the knot adds nothing whatever to the strength of the line.

For all fishing where exceptional strength is not required, the common single fisherman's knot, un-

SINGLE FISHERMAN'S KNOT

lapped, is sufficient for every purpose, and the neatest and strongest that can be used. It is

made by tying a half knot round each strand of gut with the end of the other strand, in the form shown in the cut; then drawing both knots *tight*, and lastly drawing them closely together and cutting off the ends.

In the exceptional cases adverted to, when extra strength is really essential, as in the case of Salmon casting-lines and gut-traces used for Pike-spinning, a simple modification of the above knot will be found useful. It is tied thus:—Join the strands of gut in an ordinary single fisherman's knot, pulling each of the half knots as tight as possible; but instead of drawing them together and lapping the ends down on the *outside*, draw them only to within about an eighth of an inch of each other, and lap *between* them with light-coloured silk, or, still better, fine gut previously well soaked in water. This lapping relieves the knot itself of half its duty, and on any sudden jerk, such as striking, acts as a sort of buffer to receive and distribute the strain. It is one of the simplest possible forms of knot; and from its being much neater and nearly twice as strong, may be substituted with advantage for the ordinary whipped knot in Salmon casting-

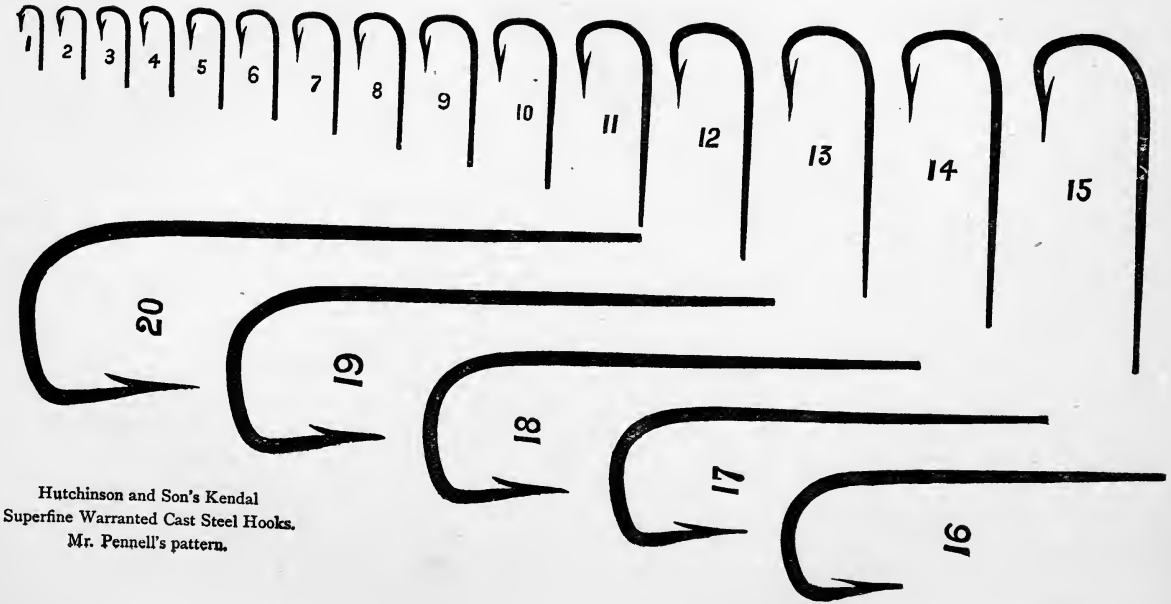
lines. As commonly tied I find that stout Salmon gut will break—at the knot—on a steady strain of from 12 to 15 pounds: tied as suggested, it will break at any other place in preference, no matter how great the strain may be. Facsimiles of the two knots, tied with the same strands of gut, are annexed.

New knot.

Ordinary knot.

HOOKS.

Too much importance cannot be attached by the fisherman to everything that concerns hooks. They are to the angler what the main-spring is to the watch, or the crank to the steam-engine—the very alpha of his craft. The whole art and paraphernalia of angling have for their objects first to hook fish, and secondly, to keep them hooked. And yet, extraordinary as it may seem in such a mechanical age as ours, we cannot go into a tackle shop and buy a hook in which one or more glaring defects—or offences against the first principles of mechanics—cannot be pointed out. The most common fault of all perhaps lies in the shape of



Hutchinson and Son's Kendal
Superfine Warranted Cast Steel Hooks.
Mr. Pennell's pattern.

the bend. I have shown, when alluding to this subject in the *Book of the Pike*, how great is the difference in the penetrating powers of different bends. Between the two extremes it amounts to no less than cent. per cent.; and yet even the best of these fall below the point of efficiency which ought to be attainable. Another obvious fault is over-fineness in the wire, from which it results that, when the point comes sharply in contact with a bone or other hard portion of a fish's mouth, or even on the sudden jerk occasioned by striking softer material, it "springs"—that is, yields by a widening of the bend outwards—and so fails to penetrate. On the form of the shank of the hook, again, depends to a considerable extent in fly-fishing, the proper and even swim of the lure; and whilst the point and barb are the first portions of the hook to be brought into requisition in practice, it would seem that they are the last on which any theoretical consideration has been bestowed.

In the pattern of hook which is now being manufactured by Messrs. Hutchinson, of Kendal, under my name, and of which facsimiles with their numbers are given in the annexed plate, I have

endeavoured to construct a hook with some reference to mechanical principles, and combining as far as possible the advantages of the various bends referred to, and especially of the sproat and sneck bends, whilst avoiding what I believe to be their faults. The sizes of hooks hereafter mentioned refer to the several sizes of these hooks. The proper size for each fish and bait are given under the separate heading.

Winches or Reels.

Reels may be broadly placed in two divisions—metal and wooden. The latter I dismiss as being unsuited to anything but "Nottingham fishing," of which more hereafter. The former, as every fisherman knows, are divided into three classes:—"plain," "check," and "multiplying." Of these I think there can be no doubt that the "multipliers" combine the greatest number of disadvantages with the fewest recommendations, as they are expensive, very apt to get out of gear, and almost useless either for winding in a large fish, or for giving line to one of any other size.

The "plain" brass reel has at least the merit of *being* plain—in the sense of simpleness and inapti-

tude for getting out of order; but it has two great drawbacks, which exist also and to a still greater extent in the wooden reel, or 'pirn' as it is called in Scotland—viz., that when the line is pulled out strongly, either by hand or by a fish, the wheel twists so rapidly as to "over run" itself, thus producing a sudden check, which at a critical juncture is very likely to cost the loss of the fish and the tackle. It is also, for another reason, very unsafe when playing a fish, as, should the pressure of the hand be for an instant removed from the line, the latter runs out so freely as to produce sudden slackness,—an evil perhaps greater even than the other, as nothing is more certainly disastrous than a slack line, and nothing more probable than the occurrence of the contingency referred to when fish have to be followed rapidly over broken ground. These are radical faults—*vices* would not be too strong a term—inherent in the principle of all "plain" reels, and inseparable from them.

They are, however, entirely obviated by the *check* system; and check reels should therefore be the only ones ever employed for any kind of heavy fishing, whether with bait or fly. With this

reel the line is entirely independent of the hand, by which indeed it is very seldom desirable that it should be touched in any way. All that the hands have to do is to keep the point of the rod well up, and a steady strain on the fish; and eyes and attention are thus left free to take care of their owner's neck—a practical advantage which those who have chased a salmon down the cragged and slippery channel of a Highland river, or a strong Pike along the margin of a Hampshire "Water Meadow" will know how to appreciate. A check winch, in fact, does two-thirds of the fisherman's work for him, and may almost be left to kill by itself; it acts upon the golden rule of never giving an inch of line unless it is *taken*, and when really required pays it out smoothly and rapidly to the exact extent necessary, and no more. The even check prevents the line "over running" itself in the one case, or sticking fast in the other; and when it becomes necessary to wind up a fish, the check reel is in every way as direct and powerful a lever as the plain old-fashioned wheel. The point to guard against is having the check too strong.

I defy any man to fairly wind in a heavy fish with a multiplying reel. It is the old mechanical principle again of losing in power what is gained in speed ; and a reel that gives four turns of the axle to one of the handle, loses exactly one-fourth of its strength for each turn—that is, has one-fourth only of the direct power of a check-winch.

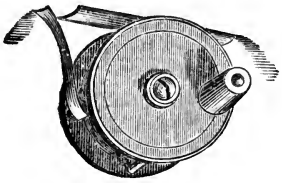
Beautiful reels for all kinds of fishing are now made on the check system ; some of plain brass, some of brass stained black, some—for the sake of lightness—of wood and metal combined, and some which are lighter than either, of aluminium. The saving in weight thus secured by the two last-named materials is very considerable, and they therefore present advantages to men who are not strong, and who may find the weight of a Salmon or trolling rod and reel tell upon their muscles, but for ordinary work and taking the chances of wear and tear and knocking about, I should give the preference to simple stained brass. Moreover, a heavy reel balances a long rod better than a light reel.

Within the last few years a considerable improvement has been introduced into the form of

reels generally, by the substitution of narrow grooves and deep side-plates for the old-fashioned shallow-plated, broad-grooved winches. The advantages thus gained are increased speed and power; speed, inasmuch as the diameter of the axle, on which the line is wound is enlarged; and power, because the handle being further from the axle, a greater leverage is obtained. The handles should be always attached to the side-plate of the reel itself, without any crank, as they obviate the constant catching of the line which takes place with handles of the ordinary shape.

One serious drawback, and so far as my experience goes, one only, is common to every reel hitherto made; namely, that the line is apt to get caught or hitched under the posterior curve of the reel itself, thus involving a constant trifling annoyance, and in case of trolling and Salmon fishing, a serious danger. To obviate it I have had a small spring attached to the last of the lateral girders, or supports, and so arranged that when the reel is in its place, the spring presses closely on the wood or fittings behind. This spring, of which a diagram is annexed, is very inexpensive, and can be at-

tached with ease to any properly made reel, and I venture to think that no troller or fly-fisher who



has once found the practical convenience of such an antidote to "hitching" will ever use a reel without it.

FLOATS.

The best and most durable floats are made of porcupine quill; for the finer description of fishing, of a single quill simply, and where larger floats are required, as in the "Nottingham style," of porcupine and goose or swan quill combined, the upper half of the float being composed of the hollow quill. This float, of which I believe I was the originator, unites the advantages of being exceeding strong, unconspicuous, and of giving probably a greater supporting power, bulk for bulk, than either of the ordinary combinations of corks or quills. It can be made of any size, up to a foot long, which is the best length for heavy Notting-

ham fishing, and to fasten either with caps at both ends, or a cap at the top, and a ring at the bottom. The former method has an advantage in making the float less liable to slip—a common occurrence which involves either a frequent "re-plumbing," or the probability of fishing at the wrong depth. Even with the double caps as fastened in the ordinary way, the float, especially after repeated striking, is apt not uncommonly to shift its position by degrees; and in order to make this impossible I pass the line *round* as well as *through* the lower cap—in other words, twice through—loosening the coil when the position of the float is to be shifted, and drawing it tight when it is fixed in its proper place. If this method is adopted, caps of gutta-percha should be used instead of quill caps, as the latter would wear and fray the line.

The above expedient will be found of considerable practical advantage in all fishing where accuracy of plumbing is essential.

SHOT.

The shot should be sufficient to submerge about three-fourths of the length of the float; and their

position on the line should be regulated according to the nature of the water. In still water, the bulk of the shot should be about two feet from the bait, a single small shot being placed midway, to insure the bait itself sinking with tolerable certainty and rapidity. In rivers where the stream is deep or strong, it will commonly be found most convenient to place the shot about a foot above the hook with a single shot midway as before.

The object being to "cock" the float, and at the same time sink the bait to the required depth, these points being attained, of course the further the shots are away from the bait the better. A few medium sized shot show less than a number of small ones.

VARNISHES.

Green Varnish.—A most convenient and durable varnish for colouring leads used in all kinds of fishing is made from powdered dark-green sealing-wax dissolved in spirits of wine, or, better in some of the spirit varnish for which the receipt is given below. This varnish dries quickly.

Rod and Tackle Varnish.—As a good varnish for rods, and generally for varnishing lappings of

hooks, &c., the following, used and commonly supplied for the purpose by most of the tackle manufacturers, will be found useful :—

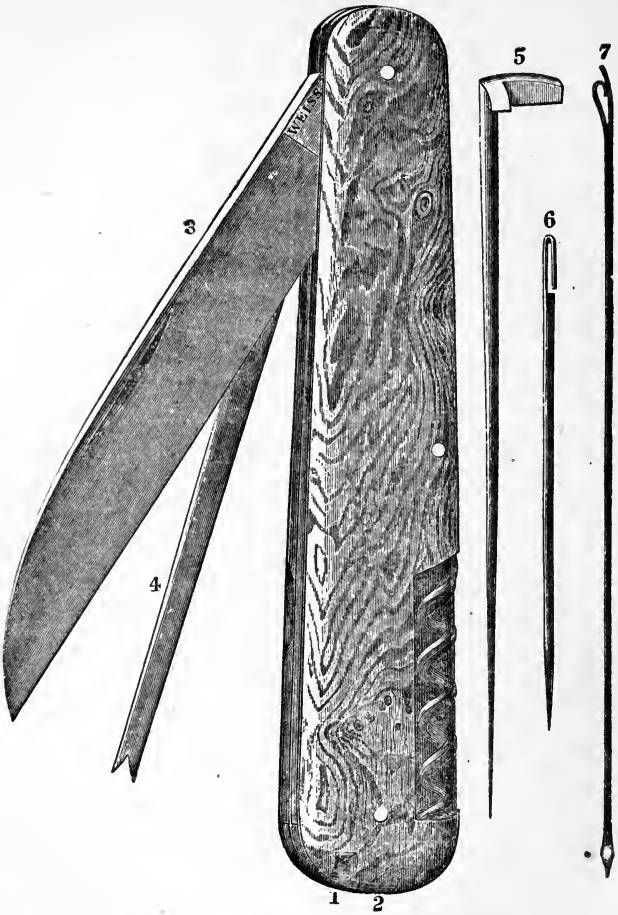
Spirits of Wine, ^{6}.
Orange Shellac, $\frac{3}{10}$.
Gum Benjamin, a small piece, about $\frac{1}{10}$.

Allow the mixture a fortnight to dissolve before using. A varnish of some sort over the lapping is exceedingly valuable in all tackle, as it protects the silk from the effects of the water. In gimp tackle it is especially important, owing to the corrosion produced by wet brass and steel coming in contact.

This varnish dries almost immediately.

DISGORGERS.

A disgorger is one of the most desirable, though not perhaps absolutely essential, items of a fisherman's equipment. In fly-fishing the use of a disgorger prolongs the life of the fly, and in every description of fishing shortens the time wasted in extracting the hooks, and saves the fingers. The most convenient way of carrying the disgorger is to suspend it by a short link from one of the



1. Box containing minnow-needle and baiting-needle.
2. Hole for pricker (marked 5).
3. Blade for crimping or other purposes.
4. Disgorger.
5. Pricker, for loosening drop-flies, separating feathers, &c.
6. Minnow-needle.
7. Baiting-needle.

FISHING-KNIFE.

breast buttons of the coat. In Pike-fishing especially, a disgorger is a *sine quâ non*, and the longer it is the better. The ordinary disgorger is too short for the purpose; and in consequence of the inconvenience experienced in extracting Pike-hooks with it, I had a "disgorger blade," if I may so term it—made, of course, without edges of any sort—inserted in my fishing-knife, by which means the length of the disgorger was doubled, and its power and readiness for use very greatly increased. The advantage of this arrangement of the disgorger, in trolling as well as in other fishing, suggested the advisability of extending the principle so as to embody in the same knife the rest of the angler's implements, and thus spare him the necessity of collecting and stowing each article before starting for the river.

The engraving represents the form and arrangement of a fishing-knife which will, I believe, be found to contain what is really required, viz.:—a powerful blade suited for crimping or other general purposes; a "disgorger blade;" a minnow needle; an ordinary baiting needle,—the last two slipping into a box in the handle of the knife,—a

sharp-pointed pricker (a useful instrument for unpicking knots, loosening drop-flies, separating feathers, &c.); and last, not least, a strong corkscrew.

"Nottingham Fishing and Tackle."

One portion of what is known as Nottingham fishing is the throwing *from the reel*—trusting, that is, to the weight of the bait and float, and the impetus given by casting, to draw off from the reel, as the line is thrown, as much of the latter as may be required for each cast. For the reasons given in the "Book of the Pike," I consider this method of casting in every way a mistake in theory, and, as applied to light float tackle, usually an impossibility in practice.

The other principle of Nottingham fishing is an excellent one, and the practice of it is rapidly spreading over all parts of the country, and for every description of river and pond bottom-fishing. Its result is to enable the angler to fish "swims" at considerable distances—sometimes as much as twenty yards—away from him, and at the same time to add to the length of the swim itself, by allowing

the bait to travel over a greater extent of ground than is possible under the ordinary method. This result is attained by the use of a largish float, and a running-line which combines strength with the greatest possible lightness and fineness, and therefore, of course, runs through the rod-rings with the utmost facility. In pond-fishing the Nottingham method gives the angler the advantages of being able to make much longer casts, and consequently to fish finer and further off. A proper Nottingham line of fifty yards long should not weigh more than one-fifth of an ounce, and is strong enough to land the largest fish which the angler is likely to meet with. In casting, the line should lie in loose coils on the ground; and when a long cast is to be made it will be found convenient to draw the line in, not through the lowest ring, but through one or other of the rings next above it—an arrangement by which, owing to the diminution of friction, a light bait can be thrown to a greater distance.

With the foregoing exceptions, the tackle, &c., already described for ordinary bottom-fishing, as well as the general observations on its use, and the

remarks elsewhere made on baits and ground-baits, are applicable to Nottingham fishing.

BAITS.

Worms.

THE best worm for every description of angling, except Barbelling or Bream-fishing, is usually the brandling or dunghill worm, found in old rubbish and manure heaps. In common with all other worms brandlings are better scoured—*i.e.*, kept for a few days in damp, clean moss, before being used. Of other kinds of worms, the reddest are the best. For Barbel, Bream, and Chub the tail end of a lob-worm, about 2 inches, is, for some reasons—probably because it is larger—a better bait. Lob-worms can frequently be obtained in the same spots as brandlings—in kitchen-gardens, and generally in any moderately damp, heavy soil. Lob-worms also come out in great numbers on dampish, low-lying lawns at night, and may be then gathered on and round the edges of the grass, borders, &c., in great numbers. I have repeatedly picked more than a quartful of solid worms in this manner in half an hour. Some lawns,

however, are much more prolific of worms than others. About ten o'clock at night is generally the best time for lob-worm gathering.

When the tail of a lob-worm is used, the worm must be broken about the middle—longer or shorter, according to circumstances — and the hook, if a single one, inserted at the point of breakage, the worm being then "run up" the hook until the shank is somewhat more than covered.

To bait with a whole worm take the hook by the shank in the right hand, and the worm, head upwards, in the left; enter the hook-point a little below the head, and after passing it through a trifle more than the length of the shank, bring the point out again, and run the worm up on to the shank and gut; then again insert the point and barb only about two-thirds down the worm in the direction of the worm's head; and finally, pull the upper portion of the worm down over the hook-shank till it touches the tail part. This is the best method both of concealing the hook and giving a natural appearance to the bait, in every kind of fishing where a single hook only is used.

Gentles.

The finest gentles are obtained from the liver of the sheep or bullock. They should be placed in moist sand to scour and get rid of a pinky-brown discoloured patch which they have when first taken from the liver. In moist sand they will keep fresh and in good order for several days. In the winter months, if it is desired to keep them for a longer time, they should be put into a large-mouthed bottle, two-thirds full of earth, the bottle being corked up and placed in a cellar or other cool situation. No general directions can be given for baiting, as this of course varies with the size of the hook. Carrion gentles (see Ground Baits) can be used when liver gentles are not obtainable.

Greaves,

Or the refuse of the fatty materials out of which tallow is made, are a good bait for Barbel, Bream, and Chub, and occasionally for Roach. The greaves, after being broken up with a hammer, should be boiled gently for about half an hour, long enough before they are wanted for use to

allow of their getting cold and hard. The whitest pieces are the best for bait, and these can be most conveniently disposed so as to hide the hook by being cut into broadish strips or slices.

"Pith" and "Bullock's Brains."

This bait is a modern discovery, but it is the most deadly of all baits for Chub-fishing in winter. The "pith" is used as the bait on the hook, and the brains for the ground bait, and I shall therefore describe them both together. They are prepared thus :—

Having obtained from a butcher some brains from a freshly-killed bullock, cow, or sheep, first thoroughly clean and wash them in cold water, and then boil them for fifteen minutes, changing the water once during the process. When cold they are ready for use.

The "pith" is the spinal marrow of a bullock or cow, and should also be obtained quite fresh. The pith requires to be boiled for about three minutes to prepare it for use. The brains and marrow from one bullock will be sufficient for an ordinary day's fishing. In order to make the brains sink

readily, and also in order to separate the particles, or make them fine, some fishing authorities recommend that the brains should be chewed by the angler as he uses them. This process, however, though effectual, is not relished by most persons, and the best substitute is to squeeze the brains in the hand whilst under water. The brains should be thrown in from time to time, in pieces about the size of a walnut, a few yards (according to stream and depth) above the spot which is covered by the bait.

The pith when used for Chub or Barbel, should be cut up as required, into pieces about the size of a largish hazel-nut, and baited on a No. 9 or No. 10 hook.

WASP-GRUBS.

The young of the wasp in its immature state as found in the comb, is a good, though very delicate bait for Roach, Dace, Chub, Bream, and Grayling. It may be easily obtained throughout the summer and early autumn months by digging out the nest: the adult wasps, it is hardly necessary to say, having been previously destroyed. For this purpose the following is the best receipt I am ac-

quainted with, and as wasps are great enemies to the orchard and fruit-garden, I commend it also to the attention of farmers :—

Procure a *strong* solution of cyanide of potassium (prussic acid) and having thoroughly wetted therewith a doubled piece of lint about six inches square, place the lint at the mouth of the hole, so that the wasps cannot well obtain ingress or egress without settling on it. Every wasp crawling over or alighting on the lint will be instantaneously killed, and twenty-four hours will commonly be found sufficient to enable the comb to be dug out without difficulty.

Pastes.

Having tried most of the pastes described in Angling manuals, the result of my experience is that there is no paste so good as a simple one of white bread-crumb, and made thus : put a lump of crumb into a pocket-handkerchief, and having twisted it up, dip it in water, giving it a few squeezes whilst immersed so as to eject the air, and substitute water. Then wring the crumb as dry as may be in the handkerchief, and taking it

out, work it for a minute or two in the hands, which should be clean.

Wools, dyes, and flavourings, whether with sugar, honey, or essential oils, are useless or mischievous. Paste is a good pond bait in summer for Roach and Rudd, and not a bad one occasionally for Carp—but this exhausts its *rôle.*

Paste should be put on in a pear shape so as to cover the shank as well as the bend of the hook. When using paste, a few *small* pellets thrown in from time to time round the float are useful.

A paste made of cheese is sometimes a killing bait for Barbel and other kindred species.

Miscellaneous Baits.

Caddice, grasshoppers, meal-worms, and earth-grubs generally are occasionally killing baits for all the before-mentioned coarse fish, but they are so difficult to obtain in any quantities that they are seldom worthy of much consideration. The meal-worm, which is perhaps the least troublesome, breeds amongst the refuse sweepings of flour mills. The caddice (or as its name is sometimes abbreviated—"cad-bait") is the larva of the phryganea,

of which there are many species, furnishing several of the insects most popular for imitation by the artificial fly. In the larval state it is found in the banks of most streams amongst gravel, decayed reed-roots, and other aquatic *débris*. It is enveloped in a shell or case, generally cylindrical, resembling commonly a piece of dead stick or rush, and from this it is of course necessary to disencumber it before use.

GROUND BAITS AND BAITING.

In every description of bottom fishing, ground bait, or a substitute for it, can be used with advantage. Anglers, however, often make a great mistake in ground baiting, by so surfeiting the fish with food that they have no need or appetite to attack the hook-bait, which, in comparison, must always present a more or less unnatural appearance. On this account also it is generally better in rivers to fish a little below rather than actually over or above the ground bait, because by so doing there is a greater chance of the unsatiated fish which are working up stream towards the ground bait, coming first into contact with the bait on the hook

As a general rule, to which, however, there are several exceptions, it may be stated as the *rationale* of ground baiting, that the bait used on the ground should be of the same description as, but inferior in quality to, that used on the hook.

Bearing in mind this rule, it will hardly be necessary to explain that of the ground baits which I am about to enumerate, the majority are also used as baits for the hook—some simply, some in combination with others. To begin with,

GENTLES.

"Carrion Gentles" are generally used for purposes of ground bait, being smaller, more easily procured, and otherwise inferior to the liver gentles, which should be used on the hook, thus carrying out the cardinal principles of ground baiting already indicated. Carrion gentles can be obtained from any carcase or offal; they are, I believe, generally procured for the tackle-shops from the dealers in horse-flesh. They should be mixed with moist sand, as, if kept in any quantity, pure and *en masse*, they are apt to scald, as the expression is;—that is, they become so heated that many die.

Carrion gentles, simply or in combination with other baits, are the best ground bait all the year round for Roach, Dace, and Bleak, and are also a very good bait for Bream or Barbel. In ponds or still waters I should advise their use for either of the fish named, without other admixture, on all occasions when they can be procured.

Paste

Is to be recommended for use principally in the same kind of water as that suitable for gentles. A few pellets of the same paste used on the hook may be thrown in round the float from time to time.

Bran, Bread, and Meal.

Wet bran mixed with carrion gentles, or worked up with soaked bread, is a very good ground bait, either for Roach, Dace, or Bleak; in fact, when used by itself, it is the most certain mode of attracting *Bleak* to any given spot that I am acquainted with. In water where there is a current, the addition of soaked bread, in about equal parts, or meal sufficient to give the bran weight and consistency, is essential. Or a handful

of meal squeezed under water in the hand, and thrown in from time to time, may be used by itself; as may also soaked bread which is first squeezed dry in the hand. The best meal for the purpose is made from wheat, ground up with the husk, such as that employed for the coarser kinds of brown bread. This should be moistened sufficiently to make it cohere in lumps, but not sufficiently to make it sticky. Bran is a great addition to both the above-named baits, as it is light and easily carried down gradually by the current, so as to entice the fish upwards.

GREAVES.

Prepared as already described, greaves is a very good ground bait for Barbel and Bream, especially in combination with some or all of the foregoing.

GRAINS.

Brewer's grains or malt is a coarse, sour ground bait, with which I never had much success.

RICE.

Boiled rice used in the positions described for gentles, is the best ground bait for Minnows; and

by bearing in mind what has been said as regards the attractiveness of bran for Bleak, and gentles for Roach and Dace, much trouble will be spared to the angler when procuring supplies of live-bait with the casting-net. A stillish curve or eddy of river about two feet deep will be found the best description of spot both for the application of this principle of baiting, and for using the cast-net effectually.

Worms,

If not the best, form one of the two or three very best ground baits for Barbel, Bream, Chub, Perch, Carp, and Tench. Authorities differ as to whether they should be used whole or "chopped."

Mr. Francis Francis, who has written some of the best chapters on bottom fishing with which I am acquainted, recommends "broken" worms; whilst Mr. Baily, of Nottingham, in his clever little manual, is strongly in favour of the "whole" system, at any rate so far as previously baited swims for Barbel are concerned. Whole worms are, I think, preferable in all cases where swims are baited any considerable time before being fished, and broken worms where only a few hours inter-

vene, or where the two processes of ground baiting and fishing commence simultaneously.

For the latter purpose it is not necessary that the ground bait should retain its vitality for any length of time, and an ordinary lob-worm may in this case be broken certainly into two pieces, with advantage. "Chopping" on the other hand, or breaking the worm into a number of small pieces, is certainly bad, as thereby one chief element of attractiveness, life, is taken away. A divided worm is for some time more lively than a whole one.

As a rule, worms, when employed as ground bait in gentle currents, or in ponds and still water, are best used by themselves simply, but in deep or strong water it is necessary to enclose them in hollow clay balls, so that the balls may carry the worms to the bottom before bursting, or being washed open by the action of the stream. The application of these rules will be explained more in detail in the remarks on Barbel fishing.

I cannot do better than conclude these observations on ground bait with a rule which should never be forgotten: after ground baiting, plumb the

exact depth, and arrange the tackle so that it may not be necessary to make a disturbance when fishing commences.

PERCH.

THOUGH fishing for Perch properly belongs to—indeed heads—this division of my subject, yet by its habits of feeding and the methods of angling employed for its capture, it might justly claim honourable mention both under the category of fly-fishing, and, taking the word in its widest sense, of trolling also. Thus, for example, in the great lakes Perch will often take a spun Minnow or a bright fly in preference to any other baits, whilst both in lake and river the deadly qualities of a live Minnow or small Gudgeon are well known to all Perch fishers.

In the case of lake-spinning for Perch it would seem that the usual rule in regard to the superiority of natural over artificial baits is reversed. Whether from the greater facility with which small artificial baits are procurable, or from some other cause, I have certainly caught and seen caught, far more Perch by the artificial than by the natural spin-

ning-bait. Formerly a "spoon" about three-quarters of an inch long was very killing in many waters; but as with Pike and Trout, so with Perch, this bait seems latterly to have lost much of its attractiveness. A stone Loach, a Minnow, or a very small Gudgeon, are all good spinning-baits.

With a gaudy red fly dressed on, say, a No. 10 hook, I have also had good sport, but its legitimate province is confined to large shallow lakes, and then is only practically worth consideration in bright hot weather and a dead calm. The flies may be either "trailed" or cast by hand; the former plan being usually best until the position of a shoal of fish is ascertained, and the latter afterwards. As already observed, however, both the methods of Perch-fishing above described, are only really much worth consideration in the great lakes, where they often come in very opportunely to fill what would otherwise be a blank day, the most impracticable weather for Trout being commonly the most favourable for Perch. It certainly does occasionally happen that good baskets may be made with the spinning-bait in rivers. I have done it repeatedly in the Kennet, below Hunger-

ford, but then the fish of this river—in my opinion the best Perch water in England—run very large, averaging from one to two pounds, and, owing to strict preservation, are comparatively little fished for. The Hampshire Avon is another beautiful river, which produces in parts Perch quite as large as those of the Kennet, but they are not so numerous.

The most killing bait for Perch in rivers, and not unfrequently in lakes also, as in Windermere for instance, is the live Minnow, and the best method of using it is with what is termed a "paternoster." The paternoster is made and used thus: to the end of about 4 feet of stained gut attach a lead, and at the distance of say 3 and 15 inches above it respectively, two hooks, Nos. 8 or 9, tied on gut lines 4 or 5 inches long. These should be attached so as to stand out at right angles to the main line.

The tackle is baited by passing each of the hooks through the upper lip (only) of a live Minnow, or small Gudgeon. A long, light, stiffish bamboo rod is most convenient for this purpose, but any stiffish rod with a line that runs tolerably

freely will do. As, however, a long line cannot be used in paternostering without loss of efficiency, danger of fouling, &c., a longish rod, not too heavy, is certainly a *desideratum*. In deep holes, under steep banks, and under weirs, are the haunts in which the greatest execution will generally be done with the paternoster; and from October to January large deep eddies, or back-waters, into which, especially after a flood, the Perch are swept. Such spots abound on the Thames and most large rivers. In the Thames, the best Perch water I know is just below the paper-mills at Temple, near Marlowe. Here, after the first heavy flood, the Perch collect in astonishing numbers; and I remember on one occasion, when fishing this pool with Mr. H. R. Francis, attended by the famous Tom Rosewell, killing some twelve dozen Perch with the paternoster in a few hours. The water was then still slightly clouded from floods.

The Weirs are the great places for the paternoster in summer, as the Perch then collect in the rapids and rushes of water to scour and brace themselves after spawning. The *modus operandi* is as follows:—The rod and tackle being arranged as

described, and the lead hanging 6 or 7 feet from the top of the rod, the baits, if the water to be fished is within the length of the rod, should be *gently* dropped or lowered down till the lead rests on the bottom; if, however, the desired spot is further off, the baits, after a slight pendulum-like movement, are lightly cast—or rather "swung"—into it, and the line drawn in until it is stretched straight between the lead and the rod-top. Every half minute or so the position of the bait should be shifted a foot or two by lifting the lead and drawing in line; a sharp twitch will indicate a bite, when the point of the rod should be instantly lowered a little so as to slacken the line somewhat, and prevent the fish prematurely pricking himself. The attack being repeated, and—as it usually happens—in a more vigorous manner, the line should be quietly but rapidly tightened, and a vigorous "lift" (not stroke) given almost at the same instant with the rod. Striking is not desirable in paternostering, first, because the Perch is a very delicate-mouthed fish, and the rod a stiff one; and secondly, because by this means both baits will almost inevitably be lost. A chief

element of success in paternostering—as indeed in all live-bait fishing—is, that the baits should be fresh and really lively.

Leads of a pear-shape are preferable to bullets, because from their shape less liable to catch in stones, sunken posts, &c. They should always be painted with green varnish which makes them less conspicuous.

In water where there are many Jack it is often a good plan to attach a third hook (No. 11 or 12) tied on fine stained gimp, about two feet above the lead, baiting it with a Gudgeon. Many good fish are caught in this way. In bottom fishing from a punt it is usually an excellent plan to put out a paternoster, which may not only add to the weight of the creel—"on its own hook," as the phrase goes—but by killing any Pike or Perch which may be roving in the neighbourhood, add to the chances of a good take of other fish. The proximity of either of these predaceous species sadly disturbs the appetite of the grami- or vermi-nivora, and a sudden stoppage in the biting of the latter is constantly attributable to this cause.

Another method of fishing for Perch with Min-

nows, sometimes used also for Trout and Pike, is what used to be called by the old writers "roving." It consists simply in substituting an ordinary gut-line, single hook, and float for the paternoster, and baiting with a live Minnow hooked through the upper lip. This method is, however, very inferior to the paternoster for either Perch or Pike; and for Trout is not to be named with either fly, worm, or spun Minnow fishing.

Besides Minnows and small Gudgeon, the only live bait that Perch take freely, both in rivers, lakes, and ponds, is the worm—a brandling being much the best. It may be used either with the ordinary tackle or in the "Nottingham style," in the mode already described at page 36.

The hook, single, should be from No. 6 to 8 or 9, according to the average size of the Perch in the waters fished. I cannot but think, however, that the two-hook worm tackle elsewhere recommended for Trout,* may probably eventually supersede the single hook for all kinds of worm fishing, at any rate in running waters, and not impossibly in pond fishing also.

* "Modern Practical Angler." Routledge and Co.

At the same time, I have not myself tested the tackle in this department of angling sufficiently to put the above forward as more than an opinion—an opinion, however, in favour of which strong *primâ facie* arguments exist, and which I should be very pleased to find confirmed by that of any other anglers, who may be inclined, for the sake of experiment, to give the tackle a trial. In river Perch fishing, the worm should just dribble along the bottom; in ponds, it should float about eight inches or a foot above it; and in lakes a little more, according to the depth.

It is usually advantageous not to strike too soon in fishing for Perch as compared with other species. The Perch rarely quits a bait, especially a worm, when he has once attacked it; indeed, if allowed, he will frequently "gorge" or swallow it entirely; but this, again, is an inconvenience in another direction. The best general rule is to let the float be carried well under water before striking.

In rivers and streams the "Nottingham plan" will often be found the most killing mode of worm fishing for Perch. As in other cases, a few broken

worms thrown in *occasionally* as ground bait will assist in attracting the fish.

Perch most commonly swim in shoals, so that when one is caught others may be expected to follow. In Windermere I have watched these shoals, and found them to consist not infrequently of many hundreds. In Slapton Ley, Devonshire, they can hardly be said to be in "shoals," as the whole water swarms with them, and I have frequently caught them there literally as fast as I could bait. As a rule, however, they are quite insignificant in the matter of size, very few of those that I caught or saw exceeding a few ounces in weight. They are smaller than even the Windermere fish. Perch are the only English species of scale fish which have been clearly proved to be bisexual, that is, to contain in each separate individual the means of reproduction complete—in other words, both milt and roe. They spawn towards the end of April, or beginning of May, casting their eggs in strings like festoons of pearls about the weeds and rocks. That they increase rapidly is not to be wondered at when it is considered that as many as 280,000 eggs have been

counted in a single specimen, weighing half a pound.

The Pope or Ruffe.

The only other species of the Perch family known to exist in this country is the Pope or Ruffe, a gregarious fish, which though resembling its congeners in many points of habit and structure, is in an angling point of view altogether inferior. The bait and tackle recommended for Gudgeon-fishing will be found also the most successful in taking Pope; and indeed it is in Gudgeon-fishing that the Pope is most frequently captured. I have seldom met with specimens exceeding four or five inches in length.

BARBEL AND BREAM.

Barbel.

The Barbel is so named from the barbels or beards with which its nose and upper lip are furnished, in order to assist it in feeling its way about in deep, and consequently more or less dark waters; and probably also for the purpose of enabling it to detect the nature of the substances with which it comes in contact. Of the species provided with

these barbels—Carp, Tench, Gudgeon, Roach, and Turbot, all find their food principally at the bottom. The barbels, in fact, afford a correct index to the habits of the fish which are thus furnished, and teach the angler that in fishing for them his bait must always be on or close to the bottom. This rule holds good with especial force in the case of the Barbel, which not only lives and feeds on the bottom, but procures its food most commonly by "rootling" with its nose amongst the gravel and stones, very much as a pig turns up a field with its snout.

Bottom fishing either by the ordinary method, or in the Nottingham style, are now the fashionable modes of Barbel fishing. The tackle being that already described, but somewhat stronger than usual, as the Barbel is a very hard fighter, not seldom running from five to seven, and even occasionally to ten pounds weight. The best baits are the tail of a lob-worm, greaves, and gentles—their "order of merit" on the average of waters being very much that in which they are here placed. When gentles are used, five or six will not be found too many for the bait; the hook being

passed laterally through the first four or five close to the tail, so as to form a bunch, and the last being reserved to cover the point of the hook, which should be a No. 5, 6, or 7, according to size and depth of water and other circumstances. For the worm-tail or greaves a No. 8, 9, or 10 hook should be used. The methods of baiting with worm-tail and greaves are described under the head of baits and baiting.

The bait should swim *just clear of* the bottom; when it drags along the ground the line is apt to come into contact with the noses of intending biters before the bait, thus risking the dilemma either of so arousing their suspicions as to make them change their mind, or, if they are still inclined to take the bait, making it almost impossible for them to do so without turning round and following it. This is an important point. In Barbel, as with other fish, except, perhaps, occasionally with Bream, it is best to wait to strike until the float disappears, or moves steadily and decidedly away.

In all light waters, and often in deep and heavy ones, the Nottingham method of barbelling will be found the most killing, as well as the most lively;

but there is another system formerly very generally practised by Thames anglers, and which is in some sense the speciality of Barbel fishing. This is termed "legering," or "leger-fishing." The tackle consists of a large hook, say No. 11, whipped on to two lengths of very strong picked gut and attached to the running line, which is again passed through a flat oblong lead, of the shape and usually of about the size of that figured in the engraving. The lead is prevented from running down the gut by the junction knot, but otherwise works freely up and down the line. No float is used, and the bites are distinguished by the touch.

The bait being cast to the desired spot, the running-line is kept stretched tolerably tight between the point of the rod and the lead, which of course rests on the bottom. A few slight twitches indicate a bite, and a decided tug the moment for striking, which is important should be done

sharply, as the lead has often to be moved by the stroke before its effect reaches the fish. There is also generally a considerable pressure of stream on the line. Owing partly to this and partly to the weight of lead to be worked, an ordinary Jack-rod and spinning-line are the most convenient implements for leger-fishing.

Legering is most effective in deep, strong eddies, and rushes of water where an ordinary bait would not reach the bottom, or could not be effectively worked. For any other water the Nottingham method is to be preferred.

The bait may be either a whole lob-worm or the tail of one. In the former case the point of the hook should be inserted in the head of the worm, and then, by a process like that of passing a bodkin and tape through a hem, be 'run' through the whole of the worm except about an inch of the tail.

The same ground baits are used as for float-fishing, but opinions differ as to whether the ground baiting should take place before or during the sport, and whether the ground bait should be worms or greaves. My own experience leads me to give the preference, especially for legering, to

worms for all kinds of Barbelling, and I prefer the swim to be baited beforehand (if possible twenty-four hours). Still I have had excellent sport with both kinds of baits, and both systems of using them. 'Ground baiting as you fish' has, however, this advantage, that if Barbel do not come on to bite at one swim there is no disappointment felt in moving to another. A fisherman—especially a professional fisherman—hates quitting the hole into which he has thrown so much time and so many pints of worms. If it is intended to fish the same swim a second day, the ground should be re-baited on quitting.

The mode of preparing and using greaves for ground bait is described in the remarks on that subject. If worms are used for baiting a Barbel swim in anything but dead water or a very slow stream, I recommend their being enclosed in hollow clay balls of about the size of a man's two fists. These, if the swim is to be fished at once, should be *thin enough to break almost directly they touch the bottom,* and the worms, of which a couple of handfuls are enough to begin with, should be broken into two pieces. If the swim is to be baited twenty-four hours

or more beforehand, a quart of worms is not too much—two days, two quarts. In this case—say a twenty-four hours' ground baiting—the worms should be used whole, and enclosed in clay balls, of which a few ought to be thin enough to break or wash open almost immediately they touch the ground, the majority being strong enough to resist the action of the stream for several hours. A few worms should be allowed to protrude half their length or so, here and there, through the outside of the thicker balls. The object of these dispositions is to avoid glutting the fish at one time, and then leaving them without anything to attract or amuse them for the rest of the twenty-four hours' interval between baiting and fishing.

On the other hand, it is most important that the solidity and number of the clay balls be so adjusted that their contents should be consumed some hours before the swim is to be tried with the rod and line —that the fish, in fact, should be allowed an interval to regain their appetites.

These are the principles which must guide the angler in "previous ground baitings," whether for Barbel or other fish. Their application, which

differs of course according to the circumstances of each individual case, is a matter often requiring both nicety and judgment, upon the display of which the success of the bottom fishing will in a great degree depend.

The Barbel spawn in May or June, and as soon as they have recovered a little strength, make their way into the swiftest streams they can find, such as weirs, mill-tails, &c., to scour and brace themselves; beginning to get into condition again in a few weeks, and being in the best season for the angler until September or October, when the frosty nights drive them from the streams and shallows into the deeper waters. Here they will be found until the spring; and in these quiet deeps and eddies they are to be caught, if anywhere, during the winter months. At this period, however, especially if the weather is very cold, it is of comparatively little use to fish for Barbel, as they lie in a sort of semi-torpid condition, and refuse to move. So inanimate are they, that the fishermen not unfrequently provide themselves with hoop landing-nets, which they place near the fish, and with a pole literally push them in; and I have known

shoals to collect under the shelter of a sunken punt, or other tidal obstruction, lying so closely one over the other as to present the appearance of a solid mass.

The Bream.

There are two species of Bream which are more or less generally scattered throughout the waters of Great Britain,—the common, or Carp Bream (*abramis brama*), and the White Bream, or Bream-flat (*abramis blicca*). The latter I have caught occasionally, but it is a miserable, bony fish, rarely exceeding one pound in weight, and almost as worthless for angling as for eating. In colour it is silvery, or dusky, instead of golden, but the most certain distinction is to be found in the teeth, situated in the throat, and which in the Bream-flat are placed in two rows on each side, numbering three and five respectively, whilst those of the Carp Bream are placed in one row only on each side, numbering five. In order to examine the teeth properly the jawbone must be taken out and the flesh and skin carefully removed.

There is a third species which has been occasionally identified by naturalists—the Pomeranian

Bream (*abramis buggenhagii*). I am acquainted, however, with but four spots in which it has been found, and it is so rare as to be only of interest to the ichthyologist. In shape it is thicker and longer in proportion than the other two species, and has its throat teeth in two rows on each side, numbering three and five respectively.

The common Bream, though a very indifferent fish for the table, is well worthy of attention in an angling point of view, as where it exists at all it is usually found in great numbers, often of a large size, and is a ready biter.

All the baits used for Roach, Perch, or Barbel will kill bream, but by far the best river-bait is the tail of a lob-worm used with the Nottingham or ordinary float-tackle,—in the case of rivers precisely as described for Barbel fishing. The gentle is another good bait.

The observations on ground baiting for Barbel are also equally applicable to Bream. The latter, however, is a pond as well as a river fish, which the former is not; and for pond-fishing for Bream some slight modifications of baits and tackle are often requisite. Thus, if worms are employed the

hook should be a size or two smaller, say a No. 8; the worm itself, the tail of which is to be used, should be also rather slenderer, or a whole worm of a smaller description, or gentles may be substituted. The float also should be lighter, and the tackle generally more like that recommended for Roach. Broken worms, and carrion gentles mixed with wet bran, are the two best pond ground baits for Bream that I am acquainted with. Only a small quantity should be thrown in at a time, and with intervals after the first few castings, of not *less* than five minutes. Bream are almost invariably found in large shoals, so that if they are once attracted to a spot, they will consume more ground bait without danger of surfeit than either Barbel or Roach.

The largest Carp Bream I ever saw weighed five pounds and some ounces, but specimens are on record which have nearly doubled this weight. The average "run" of Bream differs very much in different waters. It thrives best in large open lakes, and in slow rivers alternating with "broads" or lagoon-like reaches.

Bream spawn in May, and after scouring for a

few weeks return to their usual haunts. Omitting June, when the fish should be left to recover health and strength, the three or four months following the spawning season usually afford the best Bream fishing.

ROACH AND RUDD.

WHERE Rudd are found it is almost invariably in waters which are also inhabited by Roach (although the converse of the proposition by no means holds good), and as the two species closely resemble each other both in habits and in the method of fishing for them, baits, &c., I have bracketed them together.

Roach and Rudd, indeed, have so many striking points of resemblance that the latter were formerly considered by writers on ichthyology to be a "bastard Roach," bred betwixt the true Roach and the Bream—an opinion held by, if not originating with, Izaac Walton, who also considered the White Bream or Bream-flat, a cross between the same species. Modern science has, however, exposed the fallacy of this notion, and the three fish are now always recognised as distinct species. Indeed, recent ichthyological re-

search has thrown grave doubts upon the existence of any constantly recurring hybrids among fish. Without going into the general question, which would be beyond the scope of this work, I may mention in reference to the case in point, that the Rudd is constantly found in waters in which no Bream exist, and that the Bream-flat has been recognised only in a comparatively few rivers, whilst in hundreds Roach and Bream co-exist plentifully together without either the Bream-flat or the Rudd.

The angler is never likely to be at a loss to distinguish between either of the Breams, and the Roach, or Rudd, the whole type of fish, so to speak, being different; but between the two latter species I have often known even old fishermen to be uncertain, and therefore I will give a few of the most obvious distinctive marks of the two species.

The prevailing colour of the Roach is silvern, that of the Rudd golden, or silver with a reddish-orangy tint; the body of the Rudd is a good deal deeper and flatter than that of the Roach, and the head much shorter and more "chubby," being, in fact, little more than three-fifths of the length of that of a Roach of the same length. The most

obvious structural difference, however, and one which never varies, is to be found in the relative position of the dorsal or back fin; this in the Roach commences or originates as nearly as possible over the ventral fins; whilst in the Rudd it originates considerably further back.

By bearing these points in mind the angler need never be in doubt as to which species he has in his creel.

When first caught I should unhesitatingly award to the Rudd the palm for mere brilliancy of colouring over all other British freshwater fish. The reddish-gold, which is the prevailing body-colour, varies in the varying shades of light; the eyes and fins are tinted different shades of crimson and orange-scarlet, whilst the gill-covers and sides are of a rich golden yellow. From these peculiarities of colouring it is unnecessary to say that it derives its name. Its specific appellation, *erythropthalmus* (from the Greek, *erythros*, red, and *ophthalmos*, the eye), has a similar origin.

I was so fortunate, a few years ago, as to discover in some ponds near Romford, Essex, a lemon or yellow-coloured variety of the Rudd. In

this fish, of which I took several dozen, all the red tints of the Rudd, even including its characteristic red eyes (or more correctly, irides), were replaced by various tints of lemon and bright yellow, the larger the fish, the deeper being the yellow colouring. The specimens—of which some are now in the British Museum—present other, and in some points structural differences.

In their natural habitats the Roach and Rudd differ, inasmuch as whilst the former species thrive and abound equally in ponds and rivers, the latter are comparatively confined to waters of a stagnant character, or lagoon-like expanses connected by rivers, like some of the Norfolk broads, in which the Rudd are known to abound. The most remarkable water for Rudd with which I am personally acquainted, is Slapton Ley, in Devonshire, where these fish not only breed in vast numbers, but attain an unusual size, from 1 to 2 pounds being a weight of common occurrence.

The Rudd spawns in April, or early in May, according to the forwardness of the spring, and the Roach about a month later, when they usually ascend from the lower parts of the rivers, fighting

their way up intervening rapids with persistent energy, until they find a suitable spot—usually a weedy shallow—in the higher reaches.

After spawning they repair to the nearest swift gravelly shallows to scour, and subsequently into quieter currents, where they should be fished for until September or October, when they begin to retire for the winter into deep and still waters, preferring usually a gravelly or sandy bottom.

Roach and Rudd will occasionally take most of the baits already described for Bream; paste and gentles, however, are the two best, and of these I have found from experience that gentles are usually both the most killing and the most reliable, taking all waters and weathers throughout the year. They are also much more convenient for use because requiring to be seldom renewed. Many anglers, in fact, go to the opposite extreme, and acting on this circumstance, do not renew the bait nearly often enough. Whenever the gentles become dead and sodden, they ought to be renewed. Rudd—and Roach also during cold weather—will often bite freely at the worm; for which purpose I have found the brandling most

successful. As liver gentles are the best general bait for the hook, so carrion gentles are the best ground-bait both for Roach and Rudd. In ponds and still waters they should be used alone, or at any rate mixed with nothing heavier than wet bran; but in running waters, unless in eddies or the gentlest currents, soaked bread or meal should be added, without which it is very difficult to regulate with any degree of nicety the point at which they will reach the ground. The stronger and deeper the stream the stiffer should be the mixture. If gentles in sufficient abundance cannot be obtained, the above ground baits, singly or in combination, are the best substitutes. Meal by itself, or mixed with boiled rice, makes a very fair ground bait for streams, as it possesses the requisite consistency and weight for withstanding the action of the water; chewed bread-crumb is also a by no means contemptible substitute in ponds and lighter waters. If possible, it is better to bait the place it is proposed to fish beforehand; and on this point, the principle laid down under the head of Barbel and Bream fishing should be observed. Roach being both smaller eaters and commonly

congregating in smaller shoals than the last-named fish, should be ground baited for with a proportionately smaller quantity of food. In ground baiting a swim the day previous, a pint or so of carrion gentles, mixed with about a quart of one or other of the baits above described, is about the right quantity. In ground baiting a swim for present fishing, two or three handfuls to begin with will be quite sufficient, smaller quantities being thrown in afterwards. As Roach are easily scared, it will be found the best plan to scatter in frequently at the head of the swim small quantities of bait in broken pieces. If the ground bait is meal or bread, a quantity about equal in bulk to a walnut is about the proper quantity for each "scattering." Whilst Roach are biting, such small pieces may be thrown in with advantage. After every two or three fish hooked, the bait should be dropped immediately in the same place. If gentles alone are used, much smaller quantities will suffice both for preliminary and subsequent ground baiting. For other remarks on the subject of baits and ground baits, mode of obtaining and preserving gentles, &c., see observations on baits.

The tackle and methods of Roach fishing are those already described in the general remarks on Tackle and Nottingham fishing, the last-named being preferable; and in either case it is of the utmost importance that the tackle and line used should be of the finest. A long, light, stiffish rod is most convenient, and many Roach fishers keep a rod expressly for the purpose, made of light East India cane, or bamboo. For gentles and paste a No. 3 or 4 hook will be found the most convenient size, a very small piece (about the sixteenth of an inch) of the shank end being nipped off. If the gentles are large, four will be found the best number to bait the above hooks with. They should be made into a "bunchy" looking bait, by the hook being passed through the first three gentles laterally, or across, *about the middle.* If threaded up to the hook in the more usual way the gentles follow its curve, and form a suspicious-looking half-circle of bodies. The point of the hook should be entirely concealed in the fourth gentle, so that when complete no part of the hook should be seen.

The bait should swim three or four inches clear

of the bottom in rivers, and in ponds at from about eight inches to a foot from the ground, according to the depth. The best depth for a river Roach swim is usually from five to seven feet, over a gravelly or sandy bottom, and the best time to strike a bite is just when the top of the float is disappearing, or is held for a moment level with the top of the water. In order to strike effectually it is advisable to fish with a short line, and the float as nearly under the point of the rod as possible. A violent and sudden darting away of the float usually indicates the bite of a small fish, which is generally missed. A heavy Roach rarely makes any great demonstration, but after one or two preliminary "bobs," quietly takes the float down.

All the foregoing observations on Roach fishing apply equally to fishing for Rudd.

Roach and Rudd will both take a fly occasionally in hot weather, and when basking at the surface. Any small black fly will take if the fish will: but the latter occurrence is so uncertain that fly-fishing for Roach cannot be recommended under ordinary circumstances.

There are three other species belonging to the same *genus* as the Roach, viz. the "Double Roach," the "Graining," and the "Azurine," or Blue Roach. These species, however, are either confined to a few particular localities, or are so rarely met with as to pertain rather to the department of the ichthyologist than that of the fisherman. An account of their habits and characteristics will be found in the "Angler-Naturalist."*

DACE AND CHUB.

THE bodies of both the Dace and Chub are more cylindrical, or elongated, than those of either the Roach or Rudd, and even without the difference of colouring this characteristic will probably prevent any difficulty arising in their identification. It is not so as regards Dace and Chub *inter se*, for these species, especially in their earlier growth, so closely assimilate in external appearance as to be constantly confounded. I have now in my mind's eye a tableau which I once witnessed: an enthusiastic young angler and ichthyologist sitting near the

* "The Angler-Naturalist: a Complete History of British Freshwater Fish." Routledge and Co.

river Wey with a volume of Yarrell's "British Fishes," in one hand, a diminutive specimen of the *genus lenciscus* in the other, and in his face a pitiable expression of bewilderment as he endeavoured to identify the species of his "captive" by a critical comparison of the relative measurements of the head, body, and fins, according to the ichthyological formulary given in the pages of that scientific, but to the uninitiated, somewhat perplexing volume. Was it a small Chub or a large Dace that he had caught? This was the problem. I forget whether he succeeded at last in solving it; but if the angler will bear in mind the following simple distinguishing characteristic he need never be in a similar dilemma:—*The ventral (or belly) fins of the Dace are always greenish with a slight tinge of red, whilst the anal fin has no red about it whatever; in the Chub both these fins are of a brilliant pink colour.*

As the Chub grows larger, the chocolate brown, almost black, of its tail-fin becomes more marked, and the whole fish rapidly assumes a bronzed or golden appearance, in place of the prevailing silvery tint which the Dace retains in its original brilliancy to the last.

The Dace is indeed a bright, graceful fish, glancing about in the clear quiet streams with which the southern counties of England especially abound, and which are too often barren of Trout or Salmon. Moreover, it is in full season in October, November, December, and January, when the latter fish are spawning or preparing for the process, and thus a red-lettered day's sport is not unfrequently to be obtained, which would otherwise have been a blank in the diary. When hooked, the Dace is one of the gamest fish that swims.

Of the Chub as a "sporting" fish less can be said with truth than of its congener, but on the other hand it grows to a far greater size, and from its being one of the comparatively few species of coarser fish which will take the fly kindly, it is not to be despised. As its specific name—the "Headed Dace"—implies, it is somewhat slow and clumsy in its movements and appearance, though withal a stately and handsome fish when large and in good condition; but I cannot but think that the fashion with old writers of painting the Chub as a sort of water-donkey must have either lacked sufficient foundation, or else that the Chub of our

ancestors was somehow different from the Chub with which we are acquainted. Possibly, however, the fish of our Metropolitan river, where most of my experience of Chub-fishing has been obtained, may be better educated than those of less classical streams. For one thing, I can vouch,—that a fish of quicker sight than the Chub does not swim in English waters. The slightest gleam of the rod, the shadow of the swallow flitting over his quiet corner, and down he goes like lead ; so quickly, in fact, that the eye is rather conscious he is no longer there than aware of his disappearance. Add to this extreme quickness of perception, the woody nature of the haunts in which he is to be found, and the fact that the successful Chub fisher must be prepared to cast his fly to within a few inches of the boughs—often into a space the size of his hat —under penalty of losing either his fish or his tackle, and it will be conceded that the task is no easy one. In fact, in this school not a few of the masters of the craft have passed their apprenticeship. Thus much as to the fish themselves ; the idiosyncrasies mentioned will assist the angler in applying the following observations on the method of catching them.

Dace Fishing.

The Dace will occasionally take all the baits enumerated for Roach and Rudd, especially gentles; but the best bait for them all the year round is a small red worm, the tackle and mode of using it, as well as the method of ground baiting, being identical with that described for Roach fishing. Any of the smaller description of worms, broken into two or three pieces, or carrion gentles, will be found the best ground bait. The haunts of Dace at different seasons, and consequently the best places for catching them, are also very similar to those of the Roach, the only difference that I am aware of being that the Dace affects rather stronger and more rapid waters than the Roach. Indeed, especially during the summer months and towards evening, Dace can be most readily taken with a fly on the swiftest rapids and shallows.

A red or black gnat, dressed on a No. 1 or No. 2 hook, will generally kill Dace, if they are disposed to rise. It often happens when Dace are rising shyly that a gentle used on the point of the hook acts as a provocative of appetite.

The Chub.

Fly-fishing.

Although I have known instances of both Dace and Chub being found in ponds, the river is their common and natural habitat. Unlike the Dace, however, the Chub is rarely taken by bottom fishing throughout the summer, during which period the fish is to be looked for either on *gravelly* shallows, especially when they run under bushes and hollow banks, or in back waters, and slow-running streams overhung with bushes and trees. In either of these positions the Chub may be taken with the artificial fly—by far the most killing method of summer fishing—so long as the weather continues warm. The fly-rod (either double or single-handed, according to fancy), and the reel, line, &c., should be the same as those used for Trout fishing. The mode of working the fly is also similar. When fishing under boughs, the great art is to cast as near to them as may be—or under them, if possible—without getting foul. Indeed, I have often found it a good plan when fishing from a boat to let the fly light actually on the fringe of

boughs sweeping the stream, the fly thus slipping off into the water with a more natural descent, and just in the position where a Chub would be likely to be on the look-out for a caterpillar or cock-chafer.

The angler should be slow rather than quick in striking a Chub with the fly—the fish, especially when large, being as I have said, somewhat slow and clumsy in its movements, and having remarkably white lips which are often visible at ten or fifteen yards off as it opens its mouth for the fly. When once hooked, and the first powerful rush for the boughs checked, the Chub very seldom escapes, being remarkably tough and gristly in the jaws and lips, or as it is termed "leather-mouthed."

As for all the other species of fly-taking fish, the ingenuity of anglers has contrived a vast variety of artificial lures for the Chub. One of these manifold products of nature and art—or of art without nature—the best are the black and red palmer and the Marlow buzz. These owe their chief killing properties to the fact that they have more *legs* (hackles) than the rest; and as I have already explained elsewhere, *à propos* of Salmon and Trout,

the movement and lifelike appearance which legs give are amongst the most important of all the characteristics of an artificial fly. This "movement" is, in the case of Chub flies, of additional importance, owing to the quiet, comparatively stagnant waters in which they are frequently employed. Trout and Salmon flies are, it is true, very commonly used on lakes, where there is no current whatever; but then, if they are to be used to any purpose, it is always when the water is curled by a breeze; and more frequently when the sky is clouded; in fly-fishing for Chub, on the contrary, the calmest of days with the brightest of suns, is the combination of weather most favourable for sport. I have also invariably found a black fly the most killing; and this has been the result of my experience—a tolerably long one—not only on bright days, but in dull gloomy weather, and sometimes late into the dusk evening, when it was so dark that to my eyes not only the colour of the fly, but the fly itself was indistinguishable. Appended is the engraving of a Chub fly which fulfils the two conditions explained, and which I myself use—dressed, of course, of different

sizes from the beginning to the end of the season, in all weathers, and at all times of the day. I

The Sweep.

advise my brother anglers to give it a fair trial, and I think they will not be disappointed. The legs are made of black hackle, which should be as long as the body of the fly, and extra thick and bushy; the body of black ostrich herl, and the tail of the same, white or satin-coloured. As it is the fashion amongst anglers to christen their offspring, I have named my sooty-featured nondescript, "the sweep."

The fly shown in the engraving is dressed on a No. 10 hook of my pattern, and is a fair ordinary size for most waters; one size smaller and one larger will be sufficient to provide for variations. The smaller size should be used when the water is very low and clear, and the larger when it is high,

or when the daylight begins to fade. This is the best time of the whole day for fly-fishing for Chub, as the cockchafers, moths, &c., on which they principally feed during the summer, are then beginning to come out.

All Chub flies are improved by placing a small piece of white kid glove—about the size of a large gentle—on the bend of the hook. I have never succeeded in making out why this should be; unless indeed it is on the well-approved principle, that "there is nothing like leather." In Chub fishing no more than a single fly should ever be used; and as this is heavy, owing to the plumpness of its body, it should in the largest size be invariably dressed on loops, by which means both the pocket and time of the angler will be saved, and he will be enabled to use a finer collar than he otherwise could.

The natural grasshopper — separate, or in combination with gentles—may be used like a fly, and is a very killing bait, or it can be employed instead of gentles on the artificial grasshopper used in Grayling fishing. With this bait, when cast like a fly, but allowed to sink a foot

or two each time, I have had occasionally good sport.

Bottom Fishing.

In the spring months a live Minnow is often a very good bait for Chub, used simply with a float and line, and a single hook passed through the upper lip. From this time to October or November, the Chub is better fished for by the fly, or by either of the methods pointed out under the same head.

About this period, however, the fish quits its summer for winter quarters,—quiet swims under willow-beds, amongst roots, by sunken piles, or in any other cover affording good shelter. The occupation of the fly-fisher is now at an end, and that of the bottom-fisher begins. The method of angling may be either the ordinary or Nottingham style, the best swim, tackle, baits, and ground-bait, being identical with those recommended for Barbel fishing. But by far the most deadly winter bait of all for Chub is "Pith," or the spinal marrow of the bullock or cow, with bullock's brains as ground bait. The method of obtaining, preparing, and using these is described in the observations on

Baits. For this mode of Chub fishing the colder the weather the better, provided only that the water is not discoloured. The pith should be used with Nottingham tackle, the most favourable situation being deepish water close to boughs and "rooty" banks. The bait should swim about three or four inches from the bottom, as nearly as may be, the brains being thrown in from time to time above the swim. In this mode of fishing it is not advisable to bait any one swim beforehand, as Chub are shy fish, and it is seldom that more than two or three can be taken out of the same place without scaring the rest: consequently it is better to move from place to place, throwing in a small quantity of ground bait at each. By this mode of fishing the largest Chub are to be taken; and when used by skilful hands, I have known a punt-well to be half filled with fish.

The Chub is sometimes locally called the "Chevin." It is the *Penci*, or *Cochgangen*, of Wales, and the *Skelly* of Scotland.

CARP AND TENCH.

CARP and Tench appear naturally to "go together," like strawberries and cream, or Cod and oyster sauce. Although I have occasionally known waters containing Carp to be destitute of Tench, I cannot call to mind a single instance of the converse of the proposition. Carp and Tench are equally long-lived out of water, their habits and food are similar. They are both to be best fished for with the same baits, at the same seasons, and, so far as bottom fishing is concerned, in precisely the same manner. It is also a curious circumstance, that whilst it is difficult to imagine two fish more opposite in colouring—the Tench being of a very dark olive-green, and the common Carp of a golden-bronze colour—yet otherwise, in the general shape and contour of the body they bear so striking a resemblance, that between specimens of the same size a change of coats would be hardly an inconvenience to either. Again, in regard to scales, it would be hard to hit upon two fish more dissimilar.

The Carp has the largest scaling of any of the

fish composing the group of which it is the type, whilst the scales of the Tench are amongst the smallest, if not actually the most minute of the whole family; and whilst the former fish makes one of the best Pike live baits that I am acquainted with, the latter, it is affirmed, exerts upon that usually omnivorous gourmand an effect absolutely repellent. Of the truth of this fact, as a fact, there seems to be no reason to doubt, though we are not, of course, bound to put implicit faith in the various theories by which it has at different times been explained. Of these the most universally accepted amongst ancient, and even by some modern authors, appears to be that the Tench is in some way the physician of the water, possessing in the thick slime with which he is covered, a natural balsam for the cure of himself and others. Camden, in his "Britannica," says that he has seen the bellies of Pike, which have been rent open, have their gaping wounds presently closed by the touch of the Tench, and by his glutinous slime perfectly healed up. The Pike, in return, it is asserted, refuses to molest his physician, even when most pressed by hunger—a statement in the accuracy of which

Oppian, Walton, Holingshed, Bowlker, Salter, Williamson, Hofland, and Fitzgibbon, all acknowledge to more or less faith.

To try the experiment practically, I once procured some small Tench, and fished with them as live baits for a whole day in some excellent Pike water, without getting a touch. In the evening I put on a small Carp and had a run almost immediately. I also tried some Pike in a stock-pond with the same Tench, but they would not take them; and though left in the pond all night—one on a hook, and one attached to a fine thread—both baits were alive in the morning—some Pike teeth marks, however, being visible on one of them; but it is, of course, quite possible that these circumstances were merely the results of accident.

Bingley's explanation of the Pike's asserted abstinence is, that the Tench is so fond of mud as to be constantly at the bottom of the water, where the Pike cannot find him. Both theories, however, require confirmation.

The male Tench are distinguished from the females by a very curious and marked difference of the ventral fins. In the females these fins are of

the ordinary size and shape, but in the males they are much larger and more muscular, and present almost the appearance of a green *concave* shell, the concave side being uppermost.

If the Tench is thus remarkable by its characteristics and traditions, the Carp is certainly no less so. The great age to which it is believed to attain, and the cunning and sagacity that have procured it the cognomen of the "Water Fox" have been frequently made the subject of comment by writers on angling. Indeed, there are some Carp now in the lakes belonging to the Palace at Fontainebleau which may be fairly said to have become historical. The oldest of them have now quite lost their normal colour from their great age, and are very nearly white. There is, moreover, evidence that many of these fish introduced into the ponds at Versailles, &c., during the reign of Louis the Fourteenth (say 1690), are either still living or were so but a short time before the Revolution of 1830. Dr. Smith, in his "Tour to the Continent," mentions them, and observes that they had grown white through age. Valenciennes refers to others in the Tuileries, which would also

come when called by their names; and Buffon assures us that he had seen in the fosses of the Ponchartrain, Carp which were known to be upwards of a century and a half old.

A year or two ago a series of ponds near Cumberland Lodge, Windsor Park, were run off for the purpose of getting rid of the Jack; and the result of the netting illustrated in a remarkable way the slow growth-rate of the Carp. Thus, nearly all the Carp taken from the Obelisk pond were of a very similar weight, viz.: from 4 lbs. to 6 lbs. These fish, within the positive knowledge of the Head Fisherman, were fifty years old at least. They had been twice removed during his memory from the different ponds, the last time some thirty-five years previous, when they weighed about 3 lbs. each. Their subsequent growth-rate could not have averaged therefore more than about an ounce a year. Old Carp are very bad breeders, and frequently retain their eggs for years, presenting occasionally the appearance of an immense tumour in the region of the abdomen.

During the winter months it is probable that both Carp and Tench retire almost wholly into the

mud, or under roots, hollows and weeds, and at this time they are hardly ever to be taken with a bait. In the summer the former species frequently lie sucking in the weeds, in a sort of lazy state, each suck making a very distinct and unmistakable noise. When not sucking or basking, Carp usually swim about in shoals near the surface of the water, returning to the bottom to feed.

The Tench spawns, with some variations, about the middle of June, or according to Willoughby, when wheat is in blossom; Carp usually commencing a little earlier, according to the temperature of the water and forwardness of the season. They deposit their spawn upon and amongst weeds, and are supposed to continue the process for a longer period than any other fresh-water fish, indeed sometimes throughout the entire summer.

Although by no means rarely found in rivers, Carp and Tench are very rarely caught there, and then, according to my experience, it is not when they are being fished for. Indeed fishing for either of these species is at the best but uncertain work, and in the case of rivers usually wholly unprofitable.

Professor Owen, who is a great adept in the art of Carp-fishing in ponds, has been kind enough to give me the result of his experience.

His practice may be formularized thus :—

1. The summer months are the only time of the year for Carp-fishing, and the best period of the day is between sunrise and about seven o'clock, after which time they usually leave off biting.
2. The best bait is a brandling.
3. He has, however, found the following paste a by no means bad substitute: soft Herring roe, worked up with bread-crumbs and wool.
4. He uses the ordinary bottom-fishing tackle with a light float, and fishes about half a foot off the bottom.

My own experience concurs almost entirely with that of Professor Owen, except as regards paste for a bait, with which I never had any sport. I used formerly to use a plain bread-crumb paste, but later experience has convinced me that it was a mistake, and that a well-scoured brandling is the

best bait both for Carp and Tench all the year round.

In open waters, however, I employ it in a somewhat different way to that adopted by Professor Owen, placing the shot at about two feet from the bait and allowing the latter to rest, *with about six inches of the line, on the bottom.* The hook for this purpose should be a No. 7, and the collar of fine round picked gut, stained of course. The float should be a light porcupine quill, and it will commonly be found expedient to use a reel, as the Carp is remarkably powerful, and without this precaution, the first rush of a heavy fish is very likely to carry away the tackle. A few broken worms thrown in from time to time are the best ground bait; or whole worms, if the place is to be baited beforehand, in which case the depth also should be very accurately plumbed, so as to avoid any disturbance in the water when the angler comes to fish. Having thrown in the bait, it is the best plan to lay down the rod until there is a bite, and not to strike until the float goes under, or—the more common result—moves steadily away.

The above observations are equally applicable to both Carp and Tench fishing.

In very weedy places this mode of fishing is not practicable, and then the best plan is to fish about mid-water, dropping the bait noiselessly in wherever a tempting-looking opening in the weeds presents itself.

ON SMALL FISH, PRINCIPALLY USED AS BAITS.

Bleak and Gudgeon.

The Bleak, though I think properly included under this division of my subject, is, in fact, rarely caught by bottom-fishing, properly so called. It is essentially what is termed a "surface-swimmer," and as such should be fished for exclusively at the top. The Gudgeon, on the contrary, is perhaps the most remarkable example amongst sporting fish, of a species haunting and feeding exclusively at the bottom; and I have bracketed the two together because they illustrate in a marked manner the importance to the angler of studying accurately the habits of the fish angled for. It is probable that if a man were to fish for

the Bleak from the beginning to the end of the season in the manner described for the Gudgeon, he would not take a single specimen, and *vice versâ*.

The Bleak is so common throughout England in most rivers producing Roach and Dace, that any detailed description of its characteristics would be superfluous. Nor is it likely to be confounded with any other fish, as it is the only one of our fresh-water species which in shape is narrow as well as flat—in other words, Sprat-like. Bleak derive their name from their shining white* scales, in which, like a girl in her first ball-dress, they seem to be never weary of glancing to and fro, and coquetting with the midges as they flit out their three hours' existence over their native stream. Accordingly, any small fly bearing a sufficient resemblance to these insects will commonly take Bleak in greater or less abundance, especially if a gentle is added on the hook-point; but the best method of Bleak-fishing is as follows:—Select a

* From a northern word signifying to bleach or whiten—*blik*, Danish; *blick* (Swedish and German) "glance," "glimmer."

light fly-rod and line, a collar of the *very finest stained gut*, with a No. 1 hook, and at about two feet from the hook fasten a small round piece of cork, about the size of a large green pea, to act as a sort of float. Choose a swim where Bleak are rising—which if they are there, they will be tolerably sure to do—and having buried the small hook in a single large liver gentle, take a quarter of a handful of bran, and after giving it one quick squeeze under water, so as not quite to soak the whole of it, cast it into the water some ten yards or so from the shore or boat, and immediately afterwards throw the bait into the same place, letting it swim quietly down until a bite is perceived. When the swim is finished repeat the cast, using a little more bran now and then as may seem judicious, in order to keep the Bleak together. If, from the rises of the fish, it appears that they are following the bran down the stream, the angler should keep with them, always casting where the most fish are rising. By this means, wherever Bleak are plentiful, a good dish can generally be calculated on, and

they will be the finest in the shoal. No shot are necessary, and the style of this fishing generally, approximates to that of artificial fly-fishing. All depends on extreme fineness in the gut and tackle.

I have already mentioned, when alluding to the cast-net, that if Bleak are required as baits, soaked bran is the most certain bait for attracting them into any given spot. A small eddy not more than two feet deep is the best water for this purpose.

Bleak dressed and eaten like Whitebait make a very good dish. It is an important point, however, that they should be eaten when quite hot, and that plenty of salt and pepper should be scattered over them whilst they are in process of frying. They spawn in May.

The Gudgeon, although principally interesting to sportsmen as a bait for other fish, has, from its instinctive readiness to bite, and general simplicity of conduct, many devotees amongst the softer sex, who often beat their lords hollow in the art. I once forfeited a pair of gloves to a fair angler, who

wagered that she would catch ten out of a dozen bites, "nibbles included," and actually did it. Notwithstanding, however, its somewhat feminine reputation, there is no doubt that Gudgeon-fishing often exercises a fascination over male minds also; and I am acquainted with many men who practically confine their angling to the capture of this fish.

Gudgeon are hardly ever seen, unless by an accident, in other than running waters; and here they are to be found—principally on gravel or sand—during the summer, which is the time for taking them. I have seen them in July and August, on the rippling shallows of the Hampshire Avon, literally by thousands, and that often in water little more than enough to cover them. In one throw of the cast-net on such a spot I took on one occasion no less than 98 Gudgeon, most of them large; and probably a score, or so, at least escaped in carrying the net over the fifty yards of shallow which intervened between me and the shore.

The ordinary tackle for bottom-fishing should be used for Gudgeon with a medium-sized porcupine

quill and cork float, fine stained gut-line, and a No. 2 or 3 hook.

From 4 to 6 feet of water, where the current is of a medium strength, is the best kind of Gudgeon swim, and the depth should be plumbed accurately, so that the bait may just "dribble" (not drag) along the bottom. The best, indeed the only good Gudgeon bait, is the worm, and of worms by far the best is the brandling. Any *small* worm, however, will do if brandlings cannot be obtained. It will generally be found that the lower half will be better than the whole worm, and that fewer bites will be missed when the hook is thus baited. The only ground bait which I am acquainted with that is of any use for Gudgeon is small broken worms, mixed with soft clayey mud, which will dissolve rapidly on reaching the bottom, and will cause a thickening or muddying of the water. This result, however, is much better achieved by raking the bottom of the river before, and occasionally during fishing, with a long, heavy iron rake, which is kept by all Thames puntsmen for this purpose. The Gudgeon are attracted by the animalculæ,

worms, caddice, &c., which are turned up in the operation.

While Gudgeon fishing, it is a very good plan to put out a paternoster for any Pike or Perch which may be roving about, and whose presence would effectually check the "biting" inclination of the smaller fish.

In the lower reaches of a river flounders are not unfrequently taken whilst Gudgeon fishing, the same baits and modes of fishing being best for both fish.

The Gudgeon spawns in May, usually in shallow waters amongst stones.

Stone Loach.

The Stone Loach, or "Beardie," though a somewhat smaller and slenderer fish, closely resembles the Gudgeon both in shape and colouring, haunting similar waters, and biting at the same bait—a small red worm. The normal position of the Loach is under stones; and here, of course, it is difficult for him either "to take" or be taken by the bait.

fish. He makes an excellent spinning-bait, how-
Consequently, he is of no interest as a sporting
ever, especially for Lake Trout, in bright weather;
and under that head will be found directions for
catching him otherwise than by hook and line.
For purposes of live-baiting the Loach is useless,
being too delicate to survive the slightest exposure
either to heat or air.

Miller's Thumb,

So named from the fancied resemblance of the head of the fish to the proverbial "Thumb of the Miller," is in his habits, baits, &c., as nearly as may be similar to the last-named species. It is, however, of no use to the angler either for purposes of sport or bait.

Minnows and Sticklebacks

Are distributed so widely over most parts of the United Kingdom, and are so well known, as to render description superfluous. A small bit of the

tail of any small worm on the smallest of hooks, is the best bait for them, but they are of little account to the angler except for bait, and when required for this purpose can generally be more conveniently caught with the Minnow net.

THE END.

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